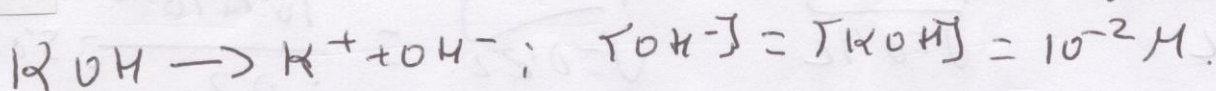


Q. 8.

(21) a)  $pH = 12 \Rightarrow [H^+] = 10^{-12} \Rightarrow [OH^-] = \frac{10^{-14}}{10^{-12}} = 10^{-2} M$ .

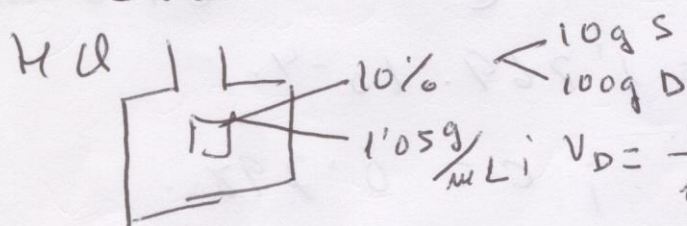


$10^{-2} = \frac{m_s}{0.25}$ ;  $m_s = 2.5 \cdot 10^{-3} \text{ moles}$

$2.5 \cdot 10^{-3} \text{ moles KOH} \times \frac{56 g}{1 \text{ mol}} \times \frac{1000 \text{ mg}}{1 g} = 140 \text{ mg}$

b) Neutralización  $\Rightarrow V_a \cdot M_a \cdot \text{val} = V_b \cdot M_b \cdot \text{val}$ .

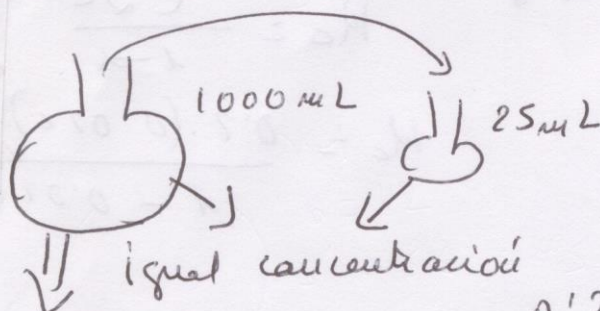
Calculamos la  $[HCl]$ .



$M = \frac{\frac{10}{36.5}}{0.095 L} = 2.9 M$ .

$V_a \cdot 2.9 \cdot 1 = 250 \cdot 10^{-2} \cdot 1$ ;  $V_a = 0.86 \text{ mL}$ .

(23)



Neutralización:  $V_a \cdot M_a \cdot \text{val} = V_b \cdot M_b \cdot \text{val}$

$50 \cdot 0.1 \cdot 1 = 25 \cdot V_b \cdot 1$

$V_b = 0.2 M$ .

$[NaOH] = 0.2 M$ ;  $0.2 M = \frac{m_s}{1 L}$ ;  $m_s = 0.2 \text{ moles NaOH}$ .

$0.2 \text{ moles NaOH} \times \frac{40 g}{1 \text{ mol}} = 8 g NaOH \text{ puro}$ ;  $\frac{8}{10} \times 100 = 80\% \text{ riqueza}$

(23) a) Se hace en el laboratorio.

$V_a \cdot M_a \cdot \text{val} = V_b \cdot M_b \cdot \text{val}$

b)  $V_a = 50 \text{ mL}$

$M_b = 0.05$

$V_b = 17.4 \text{ mL}$

$50 \cdot M_a \cdot 1 = 0.05 \cdot 17.4 \cdot 1$

$M_a = 0.0174 M$ .

$\frac{0.0174 \text{ mol}}{1 L} \times \frac{36.5 g}{1 \text{ mol}} = 0.63 \frac{g}{L}$